

Docket No. F-9180

Ser. No. 10/589,415

REMARKS

Claims 2, 3 and 5-17 are now pending in this application. Claims 1-5 are rejected. Claims 1 and 4 are cancelled herein. New claims 6-17 are added. Claims 2, 3 and 5 are amended herein to clarify the invention. Other formal matters are attended to that were not addressed by the Examiner and accordingly are considered unrelated to substantive patentability issues. For the convenience of the Examiner, APPENDIX I is provided herewith having a complete set of pending claims with all amendments effected therein.

SPECIFICATION OBJECTION

The specification is objected to for including references to numbered claim in the body thereof. The specification is amended to remove such references and withdrawal of the objection is respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. §103(a)

Claim 1 is rejected as obvious over the Sakakihara ('623) reference in view of the Nishiyama ('700) reference. The '623 reference is cited for teaching the basic construction of a pump having a common shaft with an electric motor. The Nishiyama reference is cited for teaching a motor having permanent magnets embedded in a rotor. Claim 1 is now cancelled rendering the rejection moot.

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Claims 2-5 are rejected under 35 U.S.C. §103(a) as obvious over the Sakakibara ('623) reference in view of the Nishiyama ('700) reference and further in view of the Ota reference which is cited for teaching a stator having a bearing gap separation from the rotor and the stator functioning as a bearing. The applicant herein respectfully traverses this rejection. For a rejection under 35 U.S.C. §103(a) to be sustained, the differences between the features of the combined references and the present invention must be obvious to one skilled in the art.

The device in the Ota reference uses a sleeve material 14 to act as a bearing surface member with the stator supporting the sleeve material. The sleeve member 14 is formed with plural V grooves that function as dynamic pressure generating grooves into the space of between the inner face of the stator and the outer face of the rotor 12. Rotation of the rotor 12 causes air or grease or oil to generate high dynamic pressure by means of the dynamic pressure *generating* grooves. The rotor 12 thus floats on the pressure generated. It does not teach that the stator surface acts as a bearing, nor does it teach that a stator surface having a coating acts as a bearing.

Claim 2 recites the following feature not taught by the above-cited references:

said rotor core outer-diameter surface opposing said stator core inner -diameter surface without intervening solid bearing parts

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to define a bearing gap between said rotor core outer-diameter surface and said stator core inner-diameter surface such that rotation of said rotation shaft is supported by said stator core inner-diameter surface being in sliding contact with said rotor core outer-diameter surface.

Instead, the Ota reference teaches that a separate sleeve member is required that has pressure creating grooves which generate pressure to float the parts apart to avoid sliding contacting of the stator surface with the rotor surface.

Further regarding claim 2, the Examiner alleges that the "bearing gap" is formed between the rotor and the stator. It is respectfully submitted that this is an improper interpretation of "bearing gap." The Ota reference teaches that independent members (14 or 19) are interposed between the stator and bearing and function as a bearing surface. The bearing gap is commonly understood by one skilled in the art of bearing design to mean the space between the relatively rotating and opposing surfaces. The claim now excludes such a reading of "bearing gap" by relating "without intervening solid bearing parts to define a bearing gap."

Regarding claim 3, the claim now relates recite that the stator forms a ring of contiguous material forming an inner surface. Specifically, the claim relates "said stator core has said stator core inner-diameter surface formed contiguously about an entire circumference thereof." This claim language avoids the Examiner's interpretation regarding the small gaps "d" of the Nishiyama reference

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as being zero. Gaps are gaps and even if the gaps are zero, two parts place against each other do not form surface which is contiguous about the circumference.

Regarding claim 4, the Ota reference does not teach a coating bonded to either the rotor or stator but instead to the intermediate liner member 14 and 19. Claim 4 is now cancelled and replaced by claims 8 and 13 discussed below.

Thus, it is respectfully submitted that the rejected claims are not obvious in view of the cited reference(s) for the reasons stated above. Reconsideration of the rejections of claims 2, 3, and 5, and consideration of new claims dependent therefrom and their allowance are respectfully requested.

NEW CLAIMS

Claims 6 -17 are added. As noted above, claim 4 is now replace by claims 8 and 13. Claim 8 relates:

a solid lubricant coating film made of a non-magnetic material formed adhered on one of said rotor core outer-diameter surface or said stator core inner -diameter surface; and

said rotor core outer-diameter surface opposing said stator core inner -diameter surface with only said solid lubricant coating film intervening therebetween to define a bearing gap between another one of said rotor core outer-diameter surface and said stator core inner-diameter surface and said solid lubricant coating film such that rotation of said rotation shaft is supported by said solid lubricant coating film being in sliding contact with said another one of said stator core inner -diameter surface or said rotor core outer-diameter surface.

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As noted above, and contrary to the assertion in the Office Action, the Ota reference fails to teach a solid lubricant film adhered to either a stator or a rotor. Instead it teaches a sleeve member. The Office Action appears to mistakenly interpret grease or oil to be a solid which they are not. Furthermore, they do not adhere to the surface but merely lie on it. Thus, Ota does not provide teaching leading one to adhere a solid lubricant coating to either a stator or a rotor.

Claim 13 requires the following:

first and second solid lubricant coating films made of a non-magnetic material formed adhered respectively on said rotor core outer-diameter surface and said stator core inner -diameter surface; and

... rotation of said rotation shaft is supported by said first solid lubricant coating film being in sliding contact with said second solid lubricant coating film.

As note above, Ota does not teach the solid film coating the is adhered to either the stator or the rotor. It therefore certainly cannot teach such a coating adhered to both. Further, the Ota teaching, when considered as a whole, teaches one that a special sleeve element is needed between the rotor and stator such that they are separated by the sleeve and float relative from each other. This is a far cry from the invention of claim 13 and allowance of claim 13 is respectfully requested.

Claims 6, 11 and 16 each relate that the teeth project radially inward and include "circumferentially extending branches that are separated by gaps and together form said stator core inner -diameter surface as a discontinuous surface."

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The applied art is silent concerning forming bearing surfaces or coated bearing surfaces that are discontinuous with gaps in the surface.

Claims 9 and 14 are submitted as patentable for the same reason as claim 3, i.e., the recitation that "said stator core has said stator core inner-diameter surface formed contiguously about an entire circumference thereof so as to form an annular stator inner core." As noted above, this is not taught by the applied art for use as a bearing surface or a coated bearing surface.

The remaining new claims are submitted as patentable for the recitations therein in combination with the subject matter of their respective base and intervening claims.

REQUEST FOR EXTENSION OF TIME

Applicants respectfully request a one month extension of time for responding to the Office Action. Please charge the fee of \$130 for the extension of time to Deposit Account No. 10-1250.

If there is any discrepancy between the fee(s) due and the fee payment authorized in the Credit Card Payment Form PTO-2038 or the Form PTO-2038 is missing or fee payment via the Form PTO-2038 cannot be processed, the USPTO is hereby authorized to charge any fee(s) or fee(s) deficiency or credit any excess payment to Deposit Account No. 10-1250.

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In light of the foregoing, the application is now believed to be in proper form
for allowance of all claims and notice to that effect is earnestly solicited.

Respectfully submitted,
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